

US EPA ARCHIVE DOCUMENT

4 June 2012

Jeffrey Robinson
US EPA Region 6
Air Permits Section (6PD-R)
1445 Ross Avenue
Dallas, TX 75202

**RE: Request for Concurrence – Finding of No Effect to Archaeological and Historic Resources Associated with Houston Central Gas Plant Expansion Project
Colorado County, Texas
WGI Project No. 1213**

Mr. Robinson:

On behalf of Copano Processing L.P. (Copano), Whitenton Group, Inc. (WGI) is submitting the enclosed information and request for review for the construction of a central gas plant expansion project in Colorado County, Texas (Figure 1). The purpose of the project is to construct and operate a new 400 million standard cubic feet per day cryogenic processing train at the existing Houston Central Gas Plant. Many producers, large and small, in the Eagle Ford Shale play are depending on Copano and their expansion project to bring rich gas to market. The expansion will allow these producers to bring new production online and extract the maximum value for their production. Additionally, Copano supplies natural gas liquids to the petrochemical and refining industries, which rely on Copano's supply of natural gas liquids as feedstock and blending components for their facilities.

The total time estimated to complete the construction of the expansion project is approximately 48 weeks. The proposed project is located approximately 3.0 miles southeast of the intersection of Farm to Market Road 2437 and US Highway 90.

Project location information:

USGS Quad	Latitude/Longitude
Sheridan	29.468795
Sheridan NE	-96.625591

Construction for the proposed project will take place within the existing Copano property. Construction activities will include site work, installation of drilled shaft foundations and spread footings, installation of pipe rack and supports, installation of major equipment, and installation of a new Motor Control Center building. The construction area is shown on Figures 2 and 3.

Total earth disturbance is approximately 5.9 acres. The earth disturbance will take place within a disturbed industrial site. A portion of the site is currently an active flare pit that would be relocated. No vegetation was observed within the proposed construction area.

The results of the cultural resources archival review and pedestrian survey, conducted by Horizon Environmental Services, Inc., were negative. No previously documented resources were identified during the archival review and no cultural/historical artifacts were observed during field surveys and shovel testing. A pedestrian survey was completed in May 2012. The survey area was approximately 8 acres. The larger survey area than the estimated earth disturbance was chosen to ensure adequate coverage of the project area.

The proposed gas plant expansion project will require a Prevention of Significant Deterioration Greenhouse Gas permit from the Environmental Protection Agency. WGI is seeking concurrence from the Texas Historical Commission/State Historic Preservation Officer that the proposed gas plant expansion construction activities will have *no effect* on archaeological and/or historical resources. I have attached three figures (location maps), photographs of the project area, and the cultural resource survey report of findings. Please call me at 512.353.3344 if you have any questions or need additional information.

Sincerely,

Jayne A. Shiner

3413 Hunter Road • San Marcos, Texas 78666 • office 512-353-3344 • fax 512-212-4043

www.whitentongroup.com



Enclosures:

Figure 1 Project Location

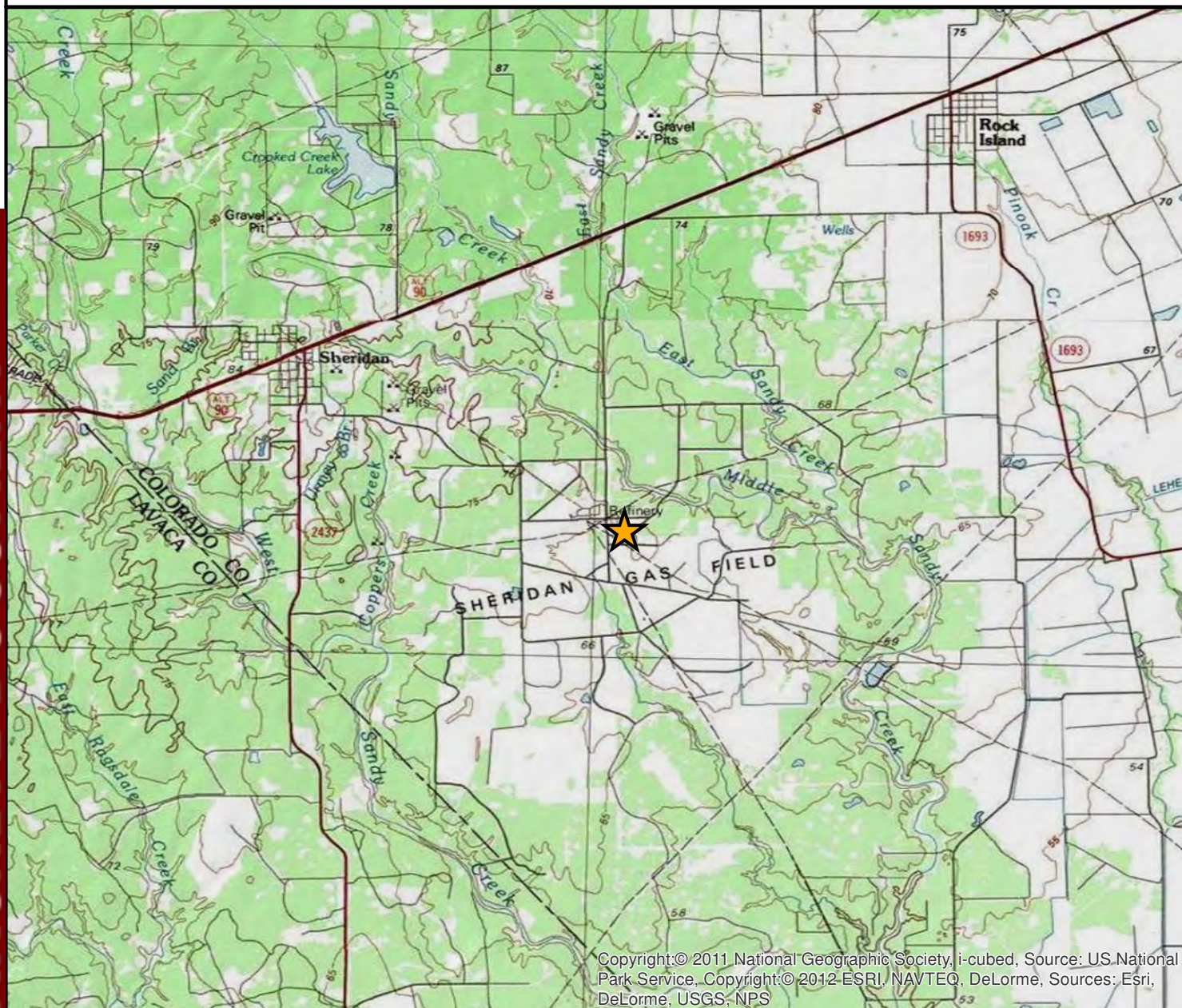
Figure 2 Aerial Photograph

Figure 3 Topographic Map

Photographic Log

An Intensive Cultural Resources Survey of the Proposed Copano-Houston Central Gas Plant Cryo Expansion Project in Colorado County, Texas

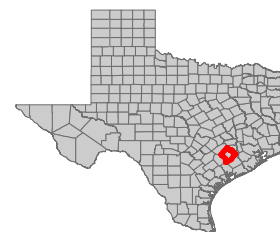
Figure 1
Project Location
Houston Central Gas Plant Expansion Project
Colorado County, Texas



Colorado County



Project Location



Background Resources:
 USGS 100K DRG
 Esri USA Topo Basemap

Surveyor(s):
 Jayme Shiner PWS
 Bryan Whisenant

Project Number and Information:

1213
 Houston Central Gas Plant Expansion
 Biological Assessment

GPS and Coordinate Type:
 Trimble Geo XH 6000 Series
 UTM NAD 1983
 Zone 14 North

Map Created:
 06/03/2012 by Jayme Shiner

WHITENTON
group environmental
 consultants

3413 Hunter Road San Marcos Texas 78666

0 5,000 10,000
 Feet



Figure 2
Construction Area
Houston Central Gas Plant Expansion Project
Colorado County, Texas



Source: Esri, I-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community, Copyright:© 2012 Esri, DeLorme, NAVTEQ, TomTom



Construction Area
 (~5.9 Acres)

Background Resources:
 USGS 1 Meter DOQQ (2010)
 Sheridan NE (NW), Sheridan (NE)
 ESRI Streetmap Basemap

GPS and Coordinate Type:
 Trimble Geo XH 6000 Series
 UTM NAD 1983
 Zone 14 North

Surveyor(s):
 Jayme Shiner PWS
 Bryan Whisenant

Map Created:
 6/03/2012 by Jayme Shiner

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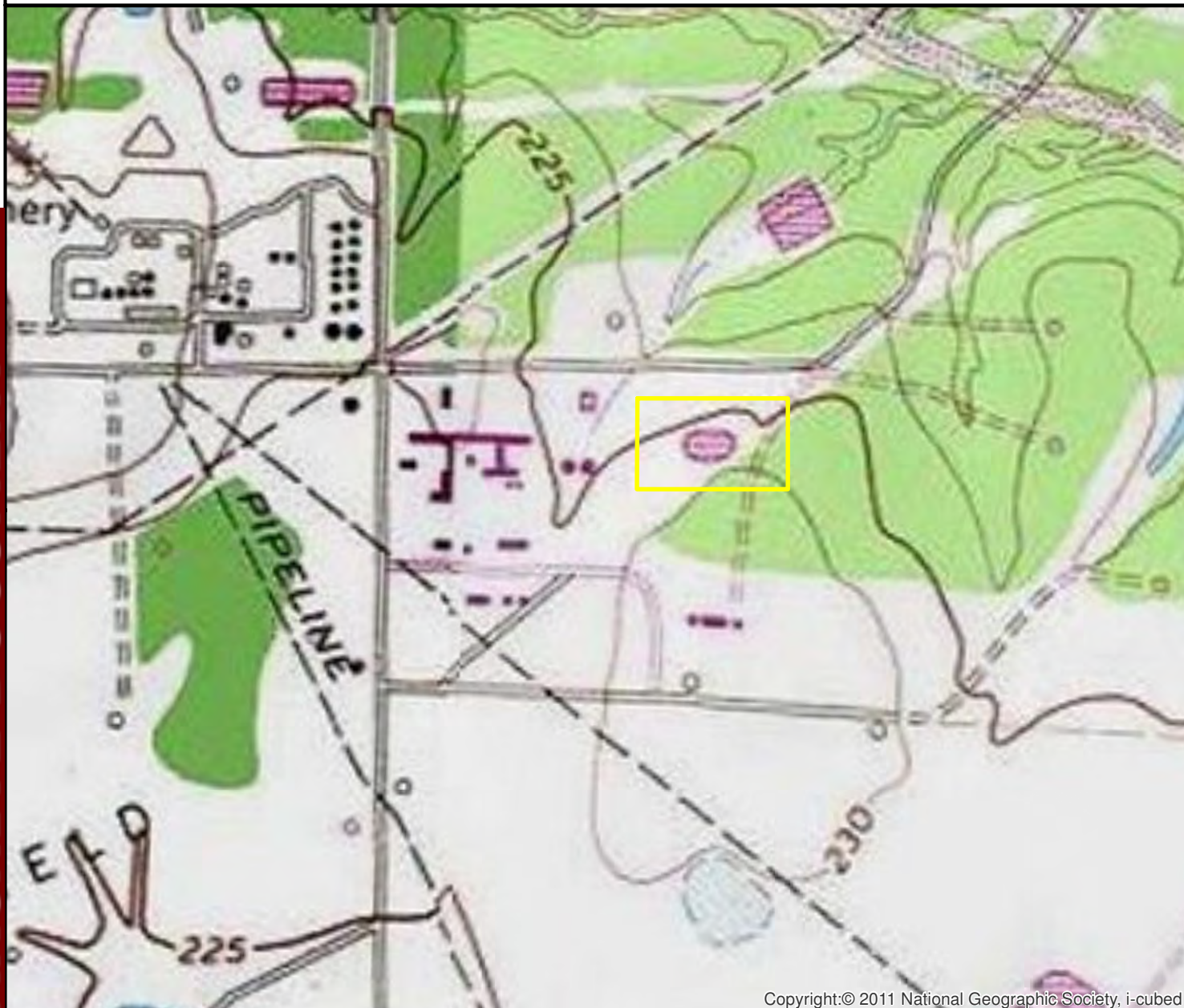
WHITENTON
group environmental
 consultants

3413 Hunter Road San Marcos Texas 78666

0 250 500 Feet



Figure 3
Construction Area - Topographic Map
Houston Central Gas Plant Expansion Project
Colorado County, Texas



Copyright:© 2011 National Geographic Society, i-cubed



Construction Area
 (~5.9 Acres)

Background Resources:
 USGS 24k DRG
 Sheridan NE, Sheridan
 ESRI Streetmap Basemap

Surveyor(s):
 Jayme Shiner PWS
 Bryan Whisenant

Project Number and Information:
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 Houston Central Gas Plant Expansion
 Biological Assessment

GPS and Coordinate Type:
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3413 Hunter Road San Marcos Texas 78666

0 500 1,000
 Feet



Houston Central Gas Plant
Expansion Project

06/07/2012

Colorado County, Texas

View: East view of the proposed
project area.



Houston Central Gas Plant
Expansion Project

06/07/2012

Colorado County, Texas

View: North view of the proposed
project area.



Houston Central Gas Plant
Expansion Project

06/07/2012

Colorado County, Texas

View: West view of the proposed
project area.



An Intensive Cultural Resources Survey of the Proposed Copano-Houston Central Gas Plant Expansion Project in Colorado County, Texas

By:

Russell K. Brownlow



HJN 110012 AR2 07

Prepared for:



Whitenton Group, Inc.
San Marcos, Texas

Prepared by:



Horizon Environmental Services, Inc.
Austin, Texas

DRAFT

Revised November 2012

An Intensive Cultural Resources Survey of the Proposed Copano-Houston Central Gas Plant Cryo Expansion Project in Colorado County, Texas

By:

Russell K. Brownlow

Prepared for:



**Whitenton Group, Inc.
3413 Hunter Road
San Marcos, Texas 78666**

Lead Federal Agency:



US Environmental Protection Agency

Prepared by:



**Horizon Environmental Services, Inc.
1507 South IH 35
Austin, Texas 78741**

**Russell K. Brownlow, Principal Investigator
HJN 110012 AR2 07**

**DRAFT
Revised November 2012**

ABSTRACT

On 1 May 2012, Horizon Environmental Services, Inc. (Horizon) conducted an intensive cultural resources survey of Copano Processing, L.P.'s (Copano) proposed Houston Central Gas Plant Cryo Expansion Project in southwestern Colorado County, Texas (Project Area). Overall, the Project Area totals approximately 8.0 acres. Although the Project Area is located entirely on private property and its development will utilize private funding, the undertaking will require a Greenhouse Gas (GHG) permit issued by the US Environmental Protection Agency (EPA). As a result, the undertaking also falls under the regulations of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. At the request of Whitenton Group, Inc. (Whitenton), Horizon conducted the cultural resources survey of the Project Area on behalf of Copano in compliance with Section 106 of the NHPA. The purpose of the survey was to determine if the development of the Project Area had the potential to have an adverse effect on any significant cultural resources listed on or considered eligible for listing on the National Register of Historic Places (NRHP).

The cultural resources survey of the Project Area resulted in entirely negative findings. No cultural materials were observed on the surface of the Project Area or within any of the 8 excavated shovel tests. The negative results were anticipated due to the fact that the Project Area is located within the boundaries of an existing industrial facility where significant ground-disturbing activities have occurred in the past.

Based on the negative survey results, it is Horizon's opinion that the development of the Project Area will have no adverse effect on significant cultural resources. Horizon therefore recommends that Copano be allowed to proceed with the proposed Houston Central Gas Plant Cryo Expansion Project, relative to the jurisdiction of the EPA and Section 106 of the NHPA. However, in the unlikely event that any cultural materials (including human remains or burial features) are inadvertently discovered at any point during construction, use, or ongoing maintenance of the Project Area, even in previously surveyed areas, all work at the location of the discovery should cease immediately, and the Texas Historical Commission (THC) and the EPA should be notified of the discovery.

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ACKNOWLEDGEMENTS

Horizon Environmental Services, Inc. (Horizon) conducted the intensive cultural resources survey of Copano Processing, L.P.'s (Copano) proposed Houston Central Gas Plant Cryo Expansion Project reported herein in compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. Russ Brownlow served as the principal investigator for the project, while Michael Mudd and Jared Wiersema conducted the field investigations. Russ Brownlow served as the lead author on this report. Michael Mudd was responsible for the drafting of the figures.

1.0 INTRODUCTION

This document reports the results of an intensive cultural resources survey of Copano Processing, L.P.'s (Copano) proposed Houston Central Gas Plant Cryo Expansion Project in southwestern Colorado County, Texas (Project Area; Figures 1-1 and 1-2). Overall, the Project Area totals approximately 8.0 acres. Although the Project Area is located entirely on private property and its development will utilize private funding, the undertaking will require a Greenhouse Gas (GHG) permit issued by the US Environmental Protection Agency (EPA). As a result, the undertaking also falls under the regulations of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. At the request of Whitenton Group, Inc. (Whitenton), Horizon Environmental Services, Inc. (Horizon) conducted the cultural resources survey of the Project Area on behalf of Copano in compliance with Section 106 of the NHPA. The purpose of the survey was to determine if the development of the Project Area had the potential to have an adverse effect on any significant cultural resources listed on or considered eligible for listing on the National Register of Historic Places (NRHP).

The cultural resources investigations consisted of an archival review, an intensive cultural resources survey of the Project Area, and the production of a report suitable for review by the State Historic Preservation Officer (SHPO) in accordance with the Texas Historical Commission's (THC) Rules of Practice and Procedure, Chapter 26, Section 27, and the Council of Texas Archeologists (CTA) Guidelines for Cultural Resources Management Reports. Russell Brownlow (Horizon's cultural resources director) served as the project's principal investigator, while Michael Mudd and Jared Wiersema (Horizon staff archeologists) conducted the field investigations.

Horizon conducted the survey of the Project Area on 1 May 2012. This entailed intensive surface inspection and subsurface shovel testing efforts within the Project Area. The Texas State Minimum Archeological Survey Standards (TSMASS) require a minimum of 2 shovel tests per acre for projects between 3.0 and 10.0 acres in size. As such, a total of 16 shovel tests were necessary within the 8.0-acre Project Area in order to comply with the TSMASS. Horizon excavated a total of 8 shovel tests within the Project Area, falling short of the minimum survey standards due to the fact that: 1) an existing, heavily disturbed flare pit covers roughly 3.0 of the 8.0 acres within the Project Area; and 2) the remaining 5.0 acres in the Project Area consist of heavily disturbed soil deposits within an existing industrial facility that precluded the potential for any intact cultural deposits (see Figure 1-2).

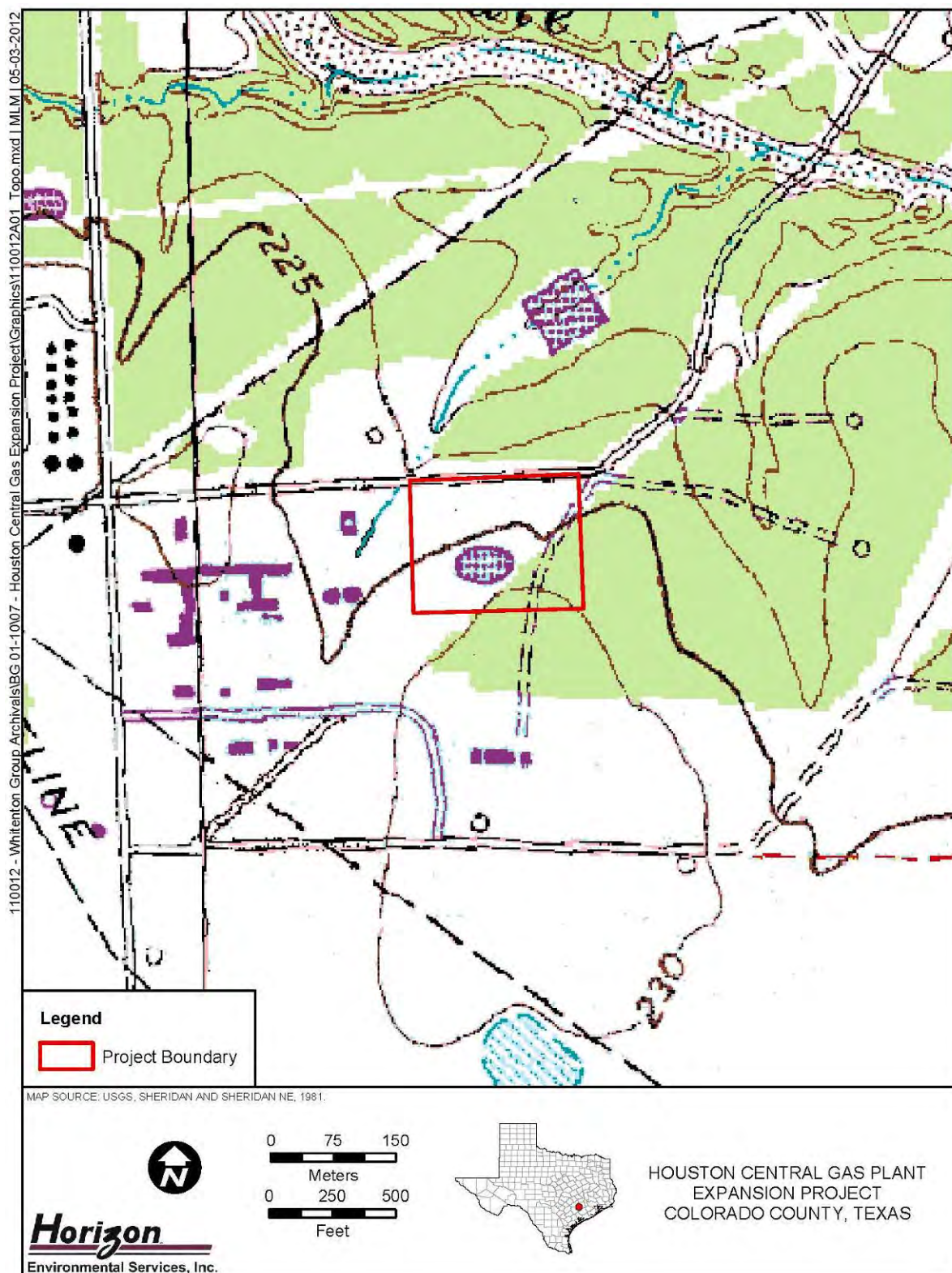


Figure 1-1. Topographic map with the location of the Project Area



Figure 1-2. Aerial photograph with the location of the Project Area

The cultural resources survey of the Project Area resulted in entirely negative findings. No cultural materials were observed on the surface of the Project Area or within any of the 8 excavated shovel tests. The negative results were anticipated due to the fact that the Project Area is located within the boundaries of an existing industrial facility where significant ground-disturbing activities have occurred in the past.

Based on the negative survey results, it is Horizon's opinion that the development of the Project Area will have no adverse effect on significant cultural resources. Horizon therefore recommends that Copano be allowed to proceed with the proposed Houston Central Gas Plant Cryo Expansion Project, relative to the jurisdiction of the EPA and Section 106 of the NHPA. However, in the unlikely event that any cultural materials (including human remains or burial features) are inadvertently discovered at any point during construction, use, or ongoing maintenance of the Project Area, even in previously surveyed areas, all work at the location of the discovery should cease immediately, and the THC and the EPA should be notified of the discovery.

2.0 ENVIRONMENTAL SETTING

2.1 GENERAL PROJECT AREA DESCRIPTION

Copano operates an existing gas processing plant and associated support facilities collectively referred to as Houston Central Gas Plant. This facility is located in Colorado County, approximately 3.3 miles (5.4 kilometers [km]) southeast of Sheridan, Texas. The Houston Central Plant has a gas processing capacity of 1,100 million standard cubic feet per day per day (MMSCFD) and is a major source of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) emissions. Copano holds New Source Review (NSR) Permits Nos. 56613, 17117, 17554, 96187, and various other permits by rule (PBRs) to authorize construction of existing emission sources. Federal Operating Permit (FOP) No. O-807 authorizes ongoing operations. Copano has decided to expand the Houston Central Gas Plant operations by installing a new 400-MMSCFD cryogenic process train within the approximately 8.0 acres of the existing facility that comprise the current Project Area. This train will consist of inlet gas mole sieve dehydrators with 2 supplemental heaters (HTR-3/HTR-4), a 400-MSCFD cryogenic process, a liquid amine treating unit controlled by a new Regenerative Thermal Oxidizer (RTO-3), 2 residue turbines (TURB-5 and TURB-6), an amine storage tank (TANK-3), and associated fugitive components (CRYO3 FUG). Representative images of the Project Area at the time of the cultural resource survey are presented in Figures 2-1 through 2-4.

2.2 PHYSIOGRAPHY AND HYDROLOGY

The Project Area is located in southwestern Colorado County in Southeast Texas. It is situated on the northern end of an upland landform that slopes gently toward Middle Sandy Creek, which is located approximately 0.3 miles (0.5 km) north of the Project Area. Elevations within the Project Area range between approximately 220.0 and 230.0 feet (67.1 and 70.1 meters) above mean sea level. Hydrologically, the proposed Project Area is situated within the Navidad River basin. The Project Area is generally drained to the north via overland sheet flow into Middle Sandy Creek and 1 of its tributaries. Middle Sandy Creek joins Sandy Creek approximately 1.6 miles (2.6 km) east of the Project Area. Sandy Creek joins the Navidad River approximately 30.0 miles (48.3 km) south of the Project Area.

2.3 SOILS

A total of 2 soil types are mapped within the boundaries of the Project Area. These soils are presented in Table 2-1 (NRCS 2012a) and in Figure 2-5.



Figure 2-1. View from northeast corner of Project Area looking southwest



Figure 2-2. View of northern half of Project Area looking west



Figure 2-3. View of existing flare pit in Project Area facing south



Figure 2-4. View along eastern half of Project Area facing south

Table 2-1. Soils mapped within the Project Area

SOIL NAME	SOIL TYPE	SOIL DEPTH (INCHES)	SETTING
Katy fine sandy loam, 0 to 1% slopes (KaA)	Fine sandy loam	0 to 24: Fine sandy loam 24 to 42: Sandy clay loam 42 to 80: Sandy clay	Loamy fluviomarine deposits of early Pleistocene age on flats
Milby sand, 1 to 3% slopes (MfB)	Sand	0 to 24: Sand 24 to 80: Sandy clay loam	Loamy and sandy alluvium of Pleistocene age on terraces

An Intensive Cultural Resources Survey of the Proposed Copano-Houston Central Gas Plant Cryo Expansion Project in Colorado County, Texas

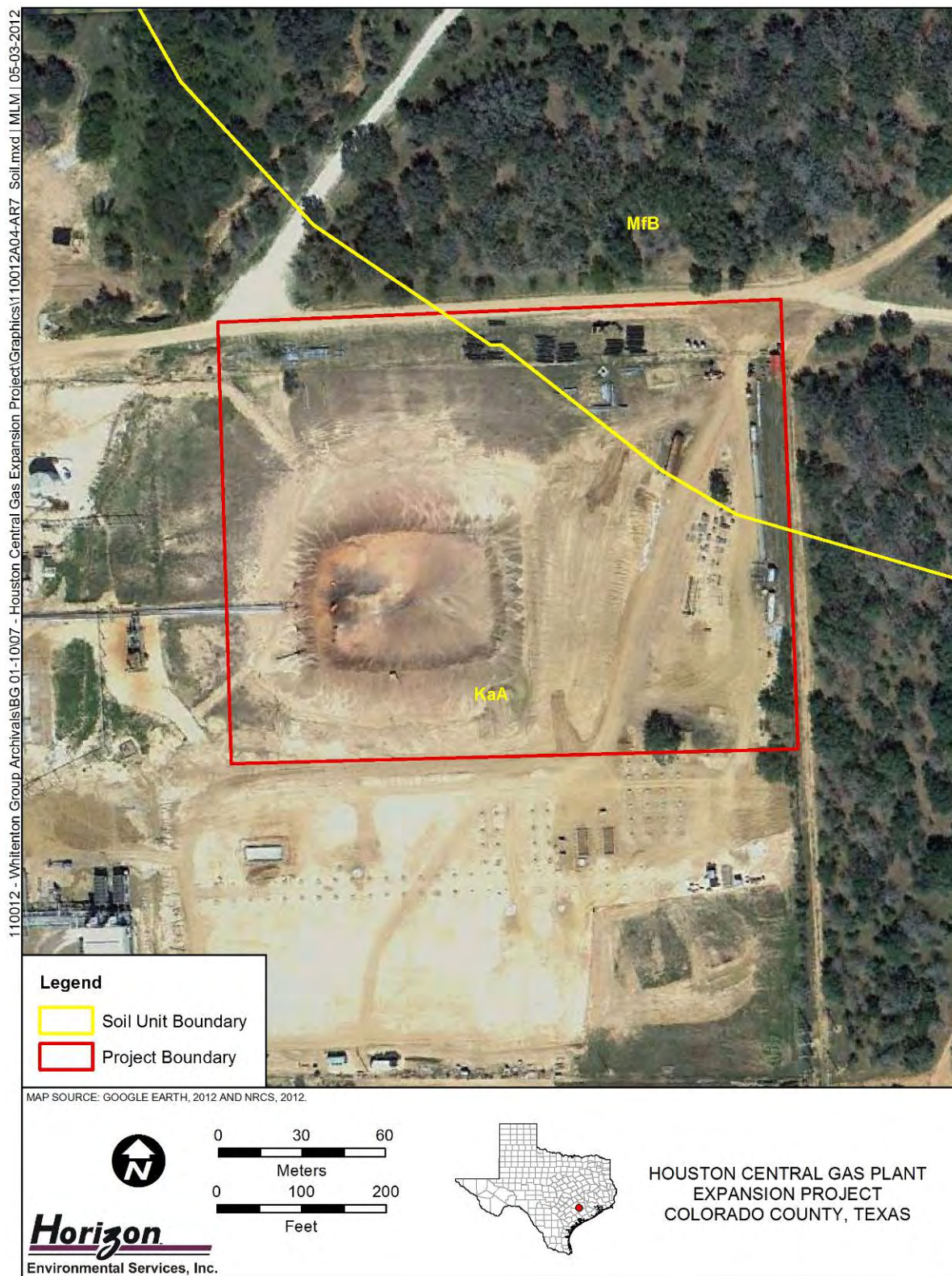


Figure 2-5. Soils mapped within Project Area

3.0 CULTURAL BACKGROUND

To break down the period of prehistory spanning from roughly 12,000 years ago to the present, a tri-partite system is utilized, based on changes in subsistence that are manifested in settlement patterns and technology. This 3-phased chronological sequence consists of Paleo-Indian, Archaic, and Late Prehistoric components.

3.1 PALEO-INDIAN PERIOD (10,000 BC TO 6000 BC)

Information pertaining to the Paleo-Indian life-ways is considerably rare, but it is generally agreed that people during this time period formed highly mobile bands that relied on hunting now-extinct Pleistocene megafauna (e.g., mammoth and bison) and foraging. Large lanceolate projectile points that are often fluted typically identify Paleo-Indian culture. These fluted styles consist of both the Clovis and Folsom types. Certain projectile points reflective of the latter end of the Paleo-Indian period include Angostura, Plainview, Scottbluff, Dalton, and San Patrice.

3.2 ARCHAIC PERIOD (6000 BC TO 650 AD)

The Archaic Period is the time when subsistence strategies became more diverse. The distribution, size, and artifacts associated with Archaic sites suggest that site occupation corresponded to seasonal rounds reliant on certain natural resources such as nuts, fruits, fish, and game. In Hall's 1981 research report, 3 principal divisions of the Archaic Period are included in the discussion of findings at the Allens Creek sites. Those divisions are the Edwards Plateau and La Harpe aspects, and the Aransas focus.

The Edwards Plateau aspect is characterized by chipped stone tools and dart points of the Pedernales, Nolan, Montell, Frio, Fairland, Castroville, Bulverde, Lange, Marcos, Marshall, Martindale, Travis, and Uvalde styles. In the margin between central and coastal Texas regions, the Edwards Plateau aspect is not clearly temporally defined. However, in the central Texas region, the aspect is more accurately broken down into phases relating to point classifications.

The La Harpe aspect is characterized by a change of principal point types from expanding-base to contracting-base styles. The change corresponded with a reliance on medium-sized game rather than buffalo or small mammals. Sites attributed to the La Harpe aspect often include boatstones or atlatl weights in their artifact assemblages (Hall 1981).

The Aransas focus is characterized by a variety of artifacts produced from marine shell material. Dart point types indicative of the focus are Ensor, Marcos, Lange, Kent, and Travis, as well as many other styles occurring less commonly. Also, the use of marine shellfish supersedes the use of mammals and fish as a subsistence base.

3.3 EARLY ARCHAIC (6000 BC TO 2500 BC)

Like the Paleo-Indian period, evidence of Early Archaic cultures is equally scarce. However, it would appear that a wider array of resources was exploited in comparison to the megafauna hunters of the Paleo-Indian period. Early Archaic people hunted smaller animals such as white-tailed deer, bear, raccoon, beaver, wild turkey, duck, and other aquatic and semiaquatic species (Neuman 1984). It is also thought that population densities were lower during this period (Aten 1983). Diagnostic projectile points of this period include Tortugas and Abasolo for the upper Texas coast (Aten 1983: 154).

3.4 MIDDLE ARCHAIC (2500 BC TO 1000 BC)

The Middle Archaic period is generally believed to be a period when the climate changed from cold and moist to warmer and drier, reaching current climatic and environmental conditions around 3000 BC. During this period, an emphasis on aquatic and riparian resources (shellfish and fish) is evidenced by the increased frequency of coastal shell midden sites (Aten 1983). Population levels are believed to have increased during this period (Muller 1983). Middle Archaic projectile points include Yarbrough, Palmillas, Kent, Elam, and Carrollton styles. Bone fishhooks, plummets, and net sinkers reflect the increased reliance on aquatic resources, while nutting stones, gouges, axes, and grinding tools suggest that Middle Archaic peoples were also well adapted to take advantage of hardwood forest resources.

3.5 LATE ARCHAIC (1000 BC TO AD 600)

The Late Archaic period is believed to be a period of increased population density, which resulted in the intensification of contact and exchange between regions. This exchange is evidenced by the presence of ground stone artifacts from the Lower Mississippi Valley at sites on the upper Texas Coast (Hall 1981). Subsistence practices were scheduled around the seasonal availability of select resources such as deer, nuts, and shellfish. During the winter months, groups tended to split into small bands, while in the summer, macrobands aggregated around plentiful resources (Muller 1983). Diagnostic projectile points of the Late Archaic period include Gary, Shumla, Morhiss, Kent, Marcos, Wells, Ellis, and Hale styles.

3.6 LATE PREHISTORIC (AD 600 TO 1600)

The Late Prehistoric period is separated from the preceding Archaic by the introduction of the bow and arrow and ceramics. The Project Area is located near the dividing line between the Central Texas and Coastal Cultural Aspects. Hall (1981) mentions 2 sets of phases that are recognized within each of these aspects: the Central Texas Austin and Toyah phases, and the Coastal Galveston Bay and Rockport phases.

The Austin phase is characterized by the transition from the use of the atlatl and dart to that of the bow and arrow and arrow points, particularly the expanding, stemmed Scallorn type. This phase is also distinguished by a decline in population and changes in settlement practices in which there was a shift from open to protected (rockshelter) sites (Black 1989:32; Collins 1995:385). In spite of these changes, most archeologists agree that Late Archaic subsistence practices and settlement patterns appear to have continued during the Austin phase (Prewitt 1974; Black 1989; Collins 1995).

The Toyah phase is characterized by relatively rapid changes in technology, notably pottery (both local and imported from the Caddo area); large, thin bifaces; Perdiz (contracting stem) arrow points; and prismatic blades (Black 1989; Collins 1995). Limited agriculture may also have begun during this time. The Toyah tool kit was associated with the hunting of bison, deer, and antelope, and, although nearly all sites dating to this phase have yielded bison bones, deer was the most significant faunal resource during this time (Black 1989:32).

The Galveston Bay phase is characterized by the use of bows, arrows, and arrow projectile type points, including Scallorn, Perdiz, Alba, Clifton, and Fresno styles, as well as parabolic, alternately beveled knives (Hall 1981). The production of sandy paste pottery of various temper are also indicative of the phase.

The Rockport phase is characterized by asphaltum-coated pottery. Point types are the same in the Rockport phase as in the Galveston Bay phase, with the addition of Matamoros and Catan dart points (Hall 1981).

3.7 HISTORIC PERIOD (POST AD 1600)

According to the Handbook of Texas Online (Odintz 2012), the principal inhabitants of the area during the Historic Period were the Coco branch of the Karankawa tribe. The Coco were nomadic hunters and gatherers who lived in widely scattered bands. The Bidais and other distant groups often migrated periodically through this area, and the Wacos, a southern Wichita people, also launched raids into the area down the Brazos River from their villages near the site of present-day Waco.

It is believed that the first European to set foot in what is now Colorado County was René Robert Cavelier, Sieur de La Salle, who traversed the area in 1686 and 1687. When La Salle's party camped on Skull Creek in January of 1687, they encountered a village of people that they called the Hebemes (Odintz 2012). The first Spaniard to reach the area was likely Alonzo De León, the governor of Coahuila, who may have ventured through in the spring of 1689 while searching for traces of La Salle's expedition. American settlement in the area began in the early 1820s with the founding of Stephen F. Austin's first colony (Odintz 2012).

4.0 ARCHIVAL RESEARCH

Archival research conducted via the Internet at the THC's *Texas Archeological Sites Atlas* (Atlas) website indicated the presence of no previously recorded archeological sites or cemeteries within a 1.0-mile (1.6-km) perimeter of the Project Area (THC 2012). Similarly, a review of the National Park Service's (NPS) NRHP Google Earth map layer indicated the presence of no historic properties listed on the NRHP within the review perimeter (NPS 2012). No documented cultural resources, including any listed on the NRHP, are located within or immediately adjacent to the boundaries of the Project Area.

Based on the Atlas data, no previous cultural resources investigations have been conducted within the boundaries of the Project Area. However, 2 previous linear cultural resources surveys have been conducted in the general vicinity. The first consists of a pipeline right-of-way (ROW) survey conducted in 2011 by Pritchett Engineering and Planning, LLC for a project permitted by the Federal Energy Regulatory Commission (FERC). This survey initiated approximately 400.0 feet (121.9 m) west of the Project Area within the boundaries of the active gas processing plant and then extended to the south and southeast. The second consists of an electrical transmission line ROW surveyed by the Lower Colorado River Authority (LCRA) in 2012. This survey initiated approximately 900.0 feet (274.3 m) south of the Project Area at an existing substation and extended to the southeast. Both of these previous cultural resources surveys produced negative results in the vicinity of the current Project Area.

Prehistoric archeological sites are commonly found in upland areas and alluvial terraces near stream/river channels or drainages. Based on the fact that the Project Area is an existing industrial plant and the proposed expansion project will only consist of adding additional facilities within the boundaries of the plant, it was Horizon's original opinion that there existed a low potential for any intact prehistoric cultural deposits within the Project Area.

In regard to historic-era resources, the fact that the Project Area is an existing industrial plant also suggested a low potential for any intact historic-era cultural deposits within the Project Area.

5.0 SURVEY METHODOLOGY

A 2-person Horizon archeological field crew completed the intensive pedestrian survey of the Project Area on 1 May 2012. This entailed intensive surface inspection and subsurface shovel testing efforts within the Project Area. The TSMASS require a minimum of 2 shovel tests per acre for projects between 3.0 and 10.0 acres in size. As such, a total of 16 shovel tests were necessary within the 8.0-acre Project Area in order to comply with the TSMASS. Horizon excavated a total of 8 shovel tests within the Project Area, falling short of the minimum survey standards due to the fact that: 1) an existing, heavily disturbed flare pit covers roughly 3.0 of the 8.0 acres within the Project Area; and 2) the remaining 5.0 acres in the Project Area consist of heavily disturbed soil deposits within an existing industrial facility that precluded the potential for any intact cultural deposits (see Figure 1-2). Additionally, due to safety reasons, the field crew was instructed to conduct the field investigations at least 100.0 feet (30.5 meters) north of the existing flare pit. All excavated matrices were screened through 0.25-inch (6.0-millimeter [mm]) hardware mesh or were trowel-sorted if the dense clay soils prohibited successful screening.

Field notes were maintained on terrain, vegetation, soils, land forms, shovel tests, cultural material observed (if any), etc. Standardized shovel test forms were completed for every shovel test. These forms included location data, depth, soil type, and notations on any artifacts encountered. If any new archeological sites were recorded, standard site forms were to be completed and filed at the Texas Archeological Research Laboratory (TARL) for permanent housing. Similarly, if any previously recorded archeological sites were assessed, updated site forms were to be completed and filed at TARL.

A selective collection strategy was utilized during the survey efforts wherein only diagnostic cultural materials were to be collected for eventual curation at an approved facility or for return to the appropriate landowner. Non-diagnostic artifacts were to be tabulated and assessed in the field and placed back where they were found. Digital photographs with a photo log were completed as appropriate. The locations of all shovel tests were recorded via handheld GPS units utilizing the UTM coordinate system and the NAD 83 map datum. Shovel test locations are presented in Figure 4-1. Shovel test data are presented in Appendix A.

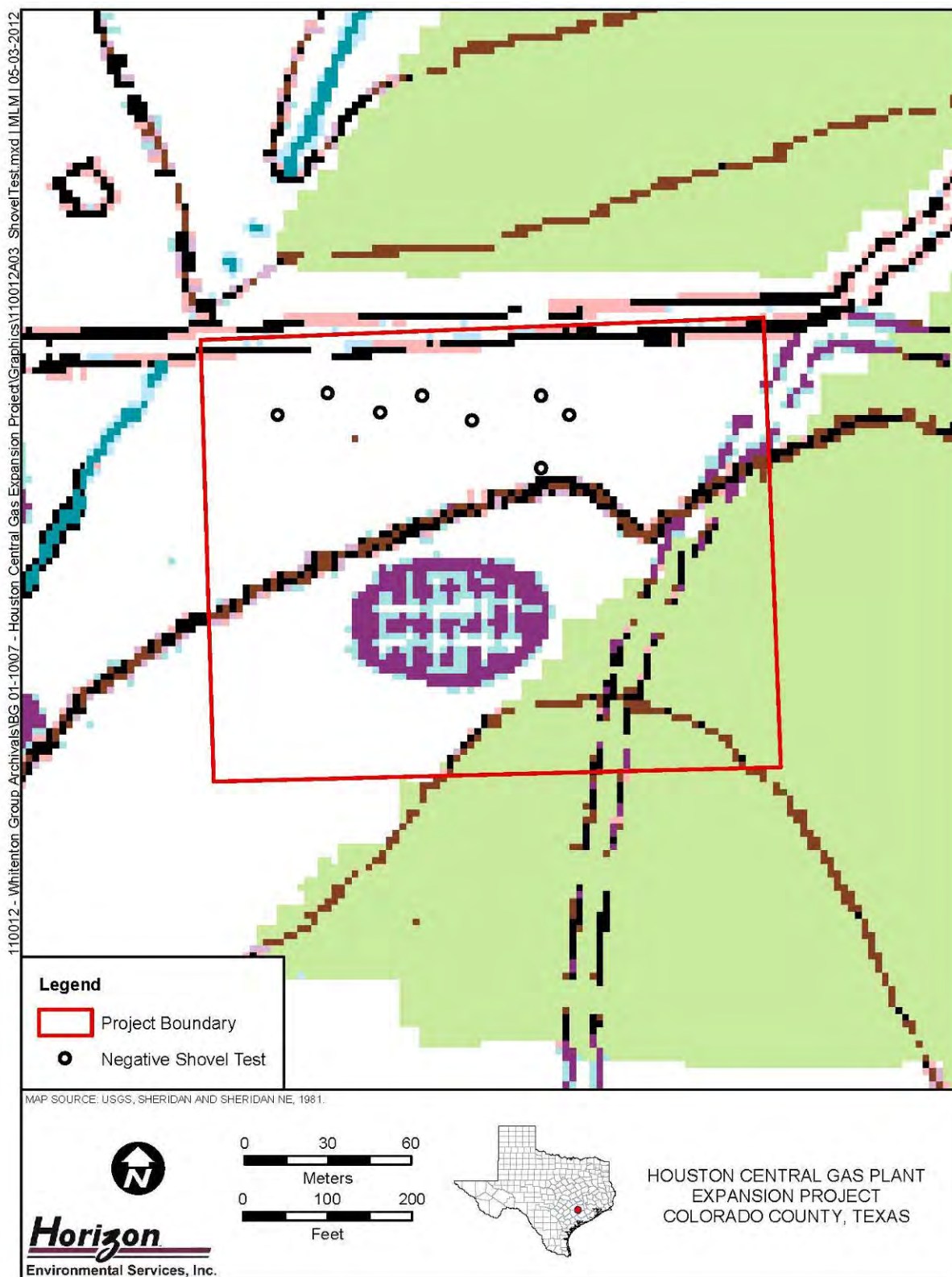


Figure 4-1. Shovel test locations within Project Area

6.0 RESULTS AND RECOMMENDATIONS

6.1 RESULTS

The cultural resources survey of the Project Area resulted in entirely negative findings. No cultural materials were observed on the surface of the Project Area or within any of the 8 excavated shovel tests. The negative results were anticipated due to the fact that the Project Area is located within the boundaries of an existing industrial facility where significant ground-disturbing activities have occurred in the past.

6.2 RECOMMENDATIONS

Based on the negative survey results, it is Horizon's opinion that the development of the Project Area will have no adverse effect on significant cultural resources. Horizon therefore recommends that Copano be allowed to proceed with the proposed Houston Central Gas Plant Cryo Expansion Project, relative to the jurisdiction of the EPA and Section 106 of the NHPA. However, in the unlikely event that any cultural materials (including human remains or burial features) are inadvertently discovered at any point during construction, use, or ongoing maintenance of the Project Area, even in previously surveyed areas, all work at the location of the discovery should cease immediately, and the THC and the EPA should be notified of the discovery.

7.0 REFERENCES CITED

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(NPS) National Park Service

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(NRCS) US Department of Agriculture, Natural Resources Conservation Service

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Prewitt, Elton R.

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(THC) Texas Historical Commission

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- 1985 *Field Guide to Stone Artifacts of Texas Indians*. Lone Star Books. Houston.

(USGS) US Geological Survey

- 1981 7.5-minute series topographic maps, Sheridan, Texas, quadrangle.
- 1981 7.5-minute series topographic maps, Sheridan NE, Texas, quadrangle.

APPENDIX A

SHOVEL TEST DATA

WP #	ST #	Easting	Northing	Depth (cmbs)	Soil	Artifacts
JW-1	JW-7	730669	3262459	0-30	Reddish brown mixed clay	None (disturbed soils)
JW-2	JW-8	730564	3262459	0-10	Light brown sand	None (disturbed soils)
				10+	Dark brown clay	None (disturbed soils)
JW-3	JW-9	730582	3262467	0-20	Very dark brown clay	None (disturbed soils)
JW-4	JW-10	730601	3262460	0-2	Pale brown sand	None (disturbed soils)
				2-02	Dark brown clay	None (disturbed soils)
JW-5	JW-11	730616	3262466	0-15	Reddish brown silty clay	None (disturbed soils)
				15+	Very dark brown clay	None (disturbed soils)
JW-6	JW-12	730634	3262457	0-20	Brown clay	None (disturbed soils)
JW-7	JW-13	730659	3262466	0-15	Pale brown sand	None (disturbed soils)
				15+	Dark brown clay	None (disturbed soils)
JW-8	JW-14	730659	3262440	0-5	Pale brown sand	None (disturbed soils)
				5+	Dark gray brown clay	None (disturbed soils)

WP = waypoint
ST = shovel test
cmbs = centimeters below surface

APPENDIX B

CURRICULUM VITAE FOR PRINCIPAL INVESTIGATOR

RUSSELL K. BROWNLOW
PRINCIPAL / CULTURAL RESOURCES DIRECTOR

TECHNICAL SPECIALTIES

- Cultural resource management (CRM);
- Prehistoric archeology of Texas, Oklahoma, and Louisiana;
- Compliance with the Antiquities Code of Texas (ACT), Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the Native American Graves Protection and Repatriation Act (NAGPRA);
- Prehistoric lithic technology (flint knapping);
- Ethnohistory;
- Project management;
- Archeological survey, testing, and data recovery;
- Technical report writing

EDUCATION

- B.A., Anthropology / Archeology, The University of Texas at Austin, 1992
- M.A., Anthropology, The University of Houston, 1998

PROFESSIONAL REGISTRATIONS AND TRAINING

- Registered Professional Archeologist since 2001 (RPA ID# 11924)
- TxDOT pre-certified for Service 2.10.1 (Archeological Surveys, Documentation, Excavations, Testing, Reports, and Data Recovery Plans)
- Mine Safety and Health Administration (MSHA) certified through 11/23/12

PROFESSIONAL / TECHNICAL SOCIETIES

- Texas Archeological Society (TAS)
- Council of Texas Archeologists (CTA)
- Register of Professional Archeologists (RPA)
- Texas Association of Environmental Professionals (TAEP)

AWARDS

- Texas Historical Commission Award of Merit (2004) for exceptional field research, laboratory analysis, and report production associated with 41WM815 in Williamson County, Texas

PROFESSIONAL EXPERIENCE

- Horizon Environmental Services, Inc., Austin, Texas
 - 2000 to present
 - Horizon Principal / Cultural Resources Director / Principal Investigator / Project Manager
- Texas Archeological Research Laboratory, University of Texas at Austin
 - 1998 to 2000
 - Research Associate
- Archeological and Environmental Consultants, Inc., Austin, Texas
 - 1999
 - Project Archeologist
- Houston Museum of Natural Science, Houston, Texas
 - 1998
 - Consultant
- University of Houston, Department of Anthropology, Houston, Texas
 - 1997 to 1998
 - Teaching Assistant
- Espey, Huston & Associates, Inc., Austin, Texas (now PBS&J)
 - 1994 to 1998
 - Field Technician, Laboratory Technician, Crew Chief, Field Director
- Prewitt and Associates, Inc., Austin, Texas
 - 1993
 - Field Technician
- Texas Archeological Research Laboratory, University of Texas at Austin
 - 1992
 - Laboratory Technician

FIELDS OF EXPERIENCE

Mr. Brownlow has over 19 years of experience conducting archeological research for both public institutions and private consulting firms. Examples of his archeological project experience include the following:

- In excess of 200 cultural resources surveys completed for a wide array of projects within Texas, Oklahoma, and Louisiana;
- National Register of Historic Places and/or State Archeological Landmark eligibility testing on a minimum of 36 archeological sites;
- Data recovery/mitigation efforts on a minimum of 11 archeological sites;

- Excavation of human burials from at least 7 different archeological sites including a historic cemetery containing in excess of 431 human interments, a Caddoan cemetery containing 16 human interments, and a burned rock midden site containing at least 4 human interments;
- Archeo-Geophysical (remote sensing) sampling on 3 archeological sites;
- Authoring or co-authoring over 250 technical reports of archeological investigations;
- Preparation of several archeological avoidance plans for seismic projects;
- Countless desktop archival reviews to determine the potential for cultural resources on various properties for inclusion in non-archeological documents (i.e. Phase I Environmental Site Assessments, Categorical Exclusions, etc.);
- Section 106 and/or Antiquities Code of Texas consultation for hundreds of projects with various permitting agencies including the Texas Historical Commission, Texas Water Development Board, Texas Parks and Wildlife Department, US Army Corps of Engineers, US Fish and Wildlife Service, Oklahoma State Historic Preservation Office, the Louisiana Department of Culture, Recreation, and Tourism, as well as a vast array of Tribal Historic Preservation Officers;
- In addition to his cultural resources experiences, Mr. Brownlow has also prepared a variety of non-archeological documents includes numerous Categorical Exclusions (CEs), Phase I Environmental Site Assessments (Phase I ESAs), Environmental Reports (ERs), and Environmental Assessments (EAs). He has also contributed to the production of several Environmental Impacts Statements (EISs).

Types of projects in which Mr. Brownlow has participated in or managed cultural resources services include:

- Oil and gas exploration, development, and transportation;
- Ethanol production;
- Coastal and inland residential, commercial, and industrial land development;
- Solid waste landfills;
- Dredging activities;
- Surface lignite mines;
- Municipal planning;
- Reservoir development;
- Coastal port and channel improvements;
- Transportation corridors;
- Water and wastewater transportation and treatment;
- Electricity generation and transportation;
- University research;
- Military installations.

PRESENTATIONS

- Flint knapping and stone tool technology lecture for the 1997 spring semester Introduction to Archeology class at the Department of Anthropology, University of Houston.
- Flint knapping and stone tool technology lecture for the 1997 spring semester Archeology of Texas class at the Department of Anthropology, University of Houston.
- Flint knapping and stone tool technology lecture for the 1997 fall semester Introduction to Archeology class at the Department of Anthropology, University of Houston.
- Flint knapping and stone tool technology lecture for the 1997 fall semester Introduction to Physical Anthropology class at the Department of Anthropology, University of Houston.
- Two flint knapping demonstrations for the Brazoria County summer archeology programs sponsored by BCI Long Distance.
- Perdiz Arrow Point Origins for the TARL Brown Bag Lunch, 1998.
- Perdiz Arrow Point Origins for the Houston Archeological Society, 1998.
- Perdiz Arrow Point Origins for the Travis County Archeological Society, 1998.
- Flint knapping demonstration for the Austin French Legation's annual summer camp program, 1999.
- Data Recovery Investigations at the Holt Site (41HY341). "Burned Rock Midden" Symposium at the Annual Council of Texas Archeologists Spring Meeting, 2005.
- Yearly flint knapping demonstrations for Camp Mabry's annual "Muster Day" Event.
- Routine visits to various elementary school classes to conduct flint knapping demonstrations and present archeological career details for "career days".

ARTICLES

Brownlow, R.K.

- 2000 Excavations at Rice's Crossing (41WM815). *Current Archeology in Texas*. November 2000, Volume 2, No. 2. Texas Historical Commission. Austin, Texas.
- 2009 In Search of the Lost Community of Nottingham: Archival and Archeo-Geophysical Investigations on Site 41GV71. *Current Archeology in Texas*. April 2009, Volume 11, No. 1. Texas Historical Commission. Austin, Texas.

TECHNICAL PUBLICATIONS

Espey, Huston & Associates (EH&A now PBS&J):

Brownlow, R.K.

- 1994 *Facilities Response Plan for Holly Street Power Plant, Austin, Texas*. EH&A Doc. No. 941257. Austin, Texas.

- 1995 *Facilities Response Plan for Decker Lake Power Plant, Austin, Texas*. EH&A Doc. No.950028. Austin, Texas.
- 1996 *Intensive Cultural Resource Survey of Proposed ORYX-MOYER 1-5 New 4-inch Pipeline Project*. EH&A Doc. No. 960270. Austin, Texas.

Schmidt, J.S., M.E. Cruse, and R.K. Brownlow

- 1995 *Cultural Resources Survey of Camp Swift, Bastrop County, Texas*. EH&A Doc. No. 951178. Austin, Texas.

Masters Thesis:

Brownlow, R.K.

- 1998 *Evaluating the Co-occurrence of Arrow Point Types in South Texas: Archaeological Excavations at the Batot-Hooker Site (41ME34), Medina County, Texas*. Masters Thesis presented to the Anthropology Department of the University of Houston. Houston, Texas.

Texas Archeological Research Laboratory (TARL):

Brownlow, R.K.

- 1999 Intensive Cultural Resource Survey of Fort Wolters Army National Guard Base, Parker and Palo Pinto Counties, Texas. *Studies in Archeology* 32. Texas Archeological Research Laboratory, The University of Texas at Austin.
- 2000 *Emergency Burial Salvage at 41PR88 on the Fort Wolters Training Facility, Parker Co., Texas*. Letter Report. Texas Archeological Research Laboratory, The University of Texas at Austin.
- 2000 Archeological Investigations at 41WM815, A Blackland Prairie Site, Williamson County, Texas. *Studies in Archeology* 36. Texas Archeological Research Laboratory, The University of Texas at Austin.
- 2001 National Register Eligibility of Four Sites at the Texas Army National Guard's Fort Wolters Facility, Parker Co., Texas. *Studies in Archeology* 37. Texas Archeological Research Laboratory, The University of Texas at Austin.

Contributing author in:

Takac, P.R., J.G. Paine, and M.B. Collins

- 2000 Reassessment of Ten Archeological Sites along the Houston Ship Channel – Morgan's Point to Buffalo Bayou, Harris County, Texas. *Studies in Archeology* 38. Texas Archeological Research Laboratory, The University of Texas at Austin.

Archeological and Environmental Consultants, Inc.:

Pertulla, T.K. and R.K. Brownlow

- 1999 An Archeological Survey of the Jett Road Water Project in Bexar County, Texas. *Letter Report of Investigations, No. 37.* Archeological & Environmental Consultants, Inc. Austin, Texas.

Horizon Environmental Services, Inc.:

Brownlow, R.K.

- 2000 *An Intensive Cultural Resources Survey of a Proposed Wal-Mart Site at the Northwestern Corner of the Intersection of U.S. Highway 183 and FM 1431, Cedar Park, Williamson County, Texas.* HJN 000255 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *Backhoe Trench Investigations for a Proposed Wastewater Line Crossing Brushy Creek on the Ivie Tract, Williamson County, Texas.* HJN 010016 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *Profile Documentation of Erosional Gullies in Borrow Pits Nos. 1 and 2 on Site 41WA255 for the Texas Department of Criminal Justice's Estelle Unit, Huntsville, Walker County, Texas.* Texas Antiquities Committee Permit No. 2509. HJN 000425 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of Centennial Pipeline's Proposed Pump Stations A, B, and C, Bearegard, La Salle, and West Carroll Parishes, Louisiana.* HJN 000302 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of the Proposed Centennial Pipeline Right-of-Way, Beauregard Parish, Louisiana.* HJN 000151 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of the Proposed Centennial Pipeline Right-of-Way, Jefferson, Orange, Jasper, and Newton Counties, Texas.* HJN 000151 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of a Proposed 15-acre Leander Independent School District School Site Located on the Steiner Ranch Tract, Travis County, Texas.* Texas Antiquities Committee Permit No. 2583. HJN 010136 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey and Subsequent Testing Along a Proposed Water/Wastewater Line within the Northern Right-of-Way of FM 1431 East, Williamson County, Texas.* Texas Antiquities Committee Permit Nos. 2385 and 2433. HJN 000053 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of 15 Proposed Well Sites and Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.

- 2001 *An Intensive Cultural Resources Survey of 22 Proposed Well Sites and Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of 13 Proposed Well Sites and Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of the Proposed Legacy Ridge Estates Residential Subdivision and Golf Course, Bonham, Fannin County, Texas.* HJN 010348 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of the Proposed UNOCAL Keystone Gas Storage Project, Winkler County, Texas.* HJN 000256 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of 300 Acres on the Phillips Ranch, Hays County, Texas.* HJN 010367 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of the approximately 25-acre United RV Campground, San Marcos, Hays County, Texas.* HJN 010382 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2001 *An Intensive Cultural Resources Survey of a Proposed Lower Neches Valley Authority 33-acre Water Treatment Plant Site and Associated Waterline Routes, Winnie, Chambers County, Texas.* HJN 010090. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the 4.5-mile Rainbolt Lateral Pipeline Right-of-Way, Robertson and Leon Counties, Texas.* HJN 010392 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the Proposed Widening of Ranch-to-Market Road 2243 (Alternates A and B), Leander, Williamson County, Texas.* Texas Antiquities Committee Permit No. 2722. HJN 010185 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of 12 Proposed Well Sites and Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of a Proposed 1.25-mile Natural Gas Pipeline Right-of-Way, Sweeny, Brazoria County, Texas.* HJN 020041 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of a Proposed 12-acre Home Depot Site at the Rivery, Georgetown, Williamson County, Texas.* HJN 020027 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey for a Proposed 29-mile Crude Oil Pipeline Right-of-Way, Port Neches Route of the Cameron Highway Pipeline Project, Jefferson County, Texas.* HJN 010344 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the Proposed 27-acre Target in Bee Cave #2 Site, Bee Cave, Travis County, Texas.* HJN 020067 AR. Horizon Environmental Services, Inc. Austin, Texas.

- 2002 *An Intensive Cultural Resources Survey of The Rivery, A Proposed 125-acre Development Site in Georgetown, Williamson County, Texas.* HJN 020046 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the Buttercup Creek Channelization and Wetland Mitigation Project (30 Acres), Cedar Park, Williamson County, Texas.* HJN 010333 PA. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of 5 Proposed Well Sites and Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of a Proposed 122-acre Target Store Site Located at Parmer Lane and Interstate Highway 35, Austin, Travis County, Texas.* HJN 010354 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of a Proposed 17-acre Tract to be Annexed to Kit McConnico Park Located in Lufkin, Angelina County, Texas.* Texas Antiquities Committee Permit No. 2876. HJN 020113 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of 11 Proposed Well Sites and Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the 197-acre El Camino Real Phase I Tract, A Proposed Subdivision Site in San Marcos, Hays County, Texas.* HJN 020123 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the Proposed 75-acre Greenshores Subdivision Tract Located in Northwest Austin, Travis County, Texas.* HJN 020145 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the 100-acre Wolf Tract, A Proposed Development Site in Georgetown, Williamson County, Texas.* HJN 020144 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of 9 Proposed Well Sites and Associated Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the Proposed UNOCAL Keystone Gas Storage Project and 3.8 Miles of Associated Pipeline ROW, Winkler County, Texas.* HJN 000256 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey, Monitoring, and Geomorphological Investigations along the Proposed 2.5-Mile Northern Natural Interconnect, UNOCAL Keystone Gas Storage Project, Winkler County, Texas.* HJN 000256 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *Archeological Monitoring Conducted during Texas Eastern Transmission's Replacement of Approximately 1600 feet of Pipe via Horizontal Directional Drill under the San Antonio River, Goliad County, Texas.* HJN 020169 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *Backhoe Trench Investigations Conducted on the 3.8-acre Hunt TDC No. 1 Well Site and Access Road, Anderson County, Texas.* Texas Antiquities Committee Permit No. 2935. HJN 020181. Horizon Environmental Services, Inc. Austin, Texas.

- 2002 *Backhoe Trench Investigations Conducted along the 8-mile Pinnacle Gregory A-1 Pipeline Right-of-Way, Anderson County, Texas.* Texas Antiquities Committee Permit No. 2916. HJN 020149 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of a Proposed 8-mile EPGT Natural Gas Transmission Pipeline in Travis and Hays Counties, Texas.* HJN 020128 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of a Proposed 6-acre Village 7 Sewer Treatment Plant #1 Located in The Woodlands, Harris County, Texas.* HJN 020207 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of 13 Proposed Well Sites and Associated Flow Lines on the Freeman Ranch Lease, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *Cultural Resources Investigations Conducted along Sections of New Hope and Bagdad Roads for Proposed Widening Efforts, Cedar Park, Williamson County, Texas.* Texas Antiquities Committee Permit No. 2967. HJN 020185 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Terrestrial Cultural Resources Survey of the Proposed Crude Oil Pipeline Right-of-Way for the Cameron Highway Pipeline Project's Texas City Extension, Chambers County, Texas.* HJN 020077 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *Pipeline Realignment, Cameron Highway Oil Pipeline System New 24-inch Crude Oil Pipeline, Port Neches Extension, Jefferson County, Texas.* An Addendum to: *An Intensive Cultural Resources Survey for a Proposed 29-mile Crude Oil Pipeline Right-of-Way, Port Neches Route of the Cameron Highway Pipeline Project, Jefferson County, Texas.* HJN 020078 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of the Proposed 1600-acre Belterra Subdivision Tract Located in Hays County, Texas.* HJN 020196 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of a Proposed Orange County WCID No. 1 2-acre Water Well Site; 2-acre Water Storage Tank Site; and 37,400 Linear Feet of Associated Waterline Routes in Vidor, Orange County, Texas.* Texas Antiquities Committee Permit No. 2998. HJN 020233 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of Extra Work Spaces Associated with Centennial Pipeline LLC's Proposed Horizontal Directional Drill of the Little River in Grant and La Salle Parishes, Louisiana.* HJN 020258 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2002 *An Intensive Cultural Resources Survey of 1 Proposed Well Site and 1 Proposed Flow Line on EOG Resources' Tucker Lease, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *Addendum to An Intensive Cultural Resources Survey of the Proposed Widening of Ranch-to-Market Road 2243 (Alternates A and B), Leander, Williamson County, Texas.* Texas Antiquities Committee Permit No. 2722. HJN 010185 AR. TXDOT CSJ No. 2103-01-021. Horizon Environmental Services, Inc. Austin, Texas.

- 2003 *An Intensive Cultural Resources Survey of 6 Proposed Well Sites and Associated Flow Lines on the Freeman Ranch Lease, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of 3 Proposed Well Sites and Associated Flow Lines on the Freeman Ranch Lease, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of 1 Proposed Well Site and 1 Proposed Flow Line on EOG Resources, Inc.'s Tucker Lease, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of 26 Proposed Well Sites and Associated Flow Lines on the Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of the Jefferson County Drainage District No. 6's Proposed Mayhaw Diversion, Needmore Diversion, and Green Pond Detention Area, Jefferson County, Texas.* Texas Antiquities Committee Permit No. 3031. HJN 000418 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of a Proposed Elevated Water Storage Tank Site and 2 Associated Waterline Easements, Cedar Park, Williamson County, Texas.* Texas Antiquities Committee Permit No. 3049. HJN 030012 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of a Proposed 110-acre Sand and Gravel Mine and Sorting Plant for Riverside Aggregates, Austin County, Texas.* HJN 030023 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of a Portion of the 47-acre Holt Property Located in San Marcos, Hays County, Texas.* HJN 030195 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey and Subsequent Testing of the Proposed Woodlands Southwest Detention Pond, The Woodlands, Montgomery County, Texas.* Texas Antiquities Committee Permit No. 3055. HJN 030019 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2003 *An Intensive Cultural Resources Survey of a Proposed 6-mile Natural Gas Pipeline for the UNOCAL Keystone Gas Storage Project, Winkler County, Texas.* HJN 000256. AR
- 2004 *An Intensive Cultural Resources Survey of a Proposed 31.18-acre Wal-Mart Site Located in Rockdale, Milam County, Texas.* HJN 040030. Horizon Environmental Services, Inc. Austin, Texas.
- 2004 *An Intensive Cultural Resources Survey of Proposed Oil/Gas Well Development on the Attwater's Prairie Chicken National Wildlife Refuge, Colorado County, Texas.* USFWS Special Use Permit #ATW-04-008. HJN 040088 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2004 *Data Recovery Investigations at the Holt Site (41HY341), San Marcos, Hays County, Texas.* HJN 040032 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2004 *An Intensive Cultural Resources Survey of a Proposed Water Transmission Line from High Island to Singing Sands, Galveston County, Texas.* Texas Antiquities Committee Permit No. 3298. HJN 020189 AR. Horizon Environmental Services, Inc. Austin, Texas.

- 2004 *Archeological Avoidance Plan: Proposed Seismic Survey, Brigham Oil and Gas, L.P., Alamo Project, Aransas, Calhoun, and Refugio Counties, Texas.* HJN 040006 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2004 *An Intensive Cultural Resources Survey of 13 Proposed Well Sites and Associated Flow Lines on the Freeman Ranch Lease, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2004 *An Intensive Cultural Resources Survey of 7 Proposed Well Sites on EOG Resources, Inc.'s Freeman Ranch and Tucker Leases, Texas County, Oklahoma.* HJN 010239 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2004 *National Register of Historic Places Eligibility Testing of 2 Sites (41WM650 and 41WM651) Located within the Cedar Park Town Center Development, Cedar Park, Williamson County, Texas.* HJN 040024 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2005 *Intensive Cultural Resources Survey of the Proposed Sierra Vista Substation Site and 138 kV Transmission Line, Webb County, Texas.* HJN 050144 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2005 *An Intensive Cultural Resources Survey of the Proposed 452-acre Park Lakes East Development near Humble, Harris County, Texas.* HJN 050131 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2005 *Archeological Monitoring of Scraping Investigations within the Port Bolivar Community Cemetery, Galveston County, Texas.* Texas Antiquities Committee Permit No. 3857. HJN 050057 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2005 *An Intensive Cultural Resources Survey of EOG Resources, Inc.'s Proposed Carthage Gas Unit No. 112 Alt Natural Gas Well Pad and Access Road, Panola County, Texas.* HJN 030169 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2005 *An Intensive Cultural Resources Survey for the Proposed Widening of Jefferson County Drainage District No. 6's Griffing Ditch, Beaumont, Jefferson County, Texas.* Texas Antiquities Committee Permit No. 3804. HJN 040240 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2005 *An Intensive Cultural Resources Survey of the USACE Jurisdictional Areas within a Proposed Ethanol Plant Facility in Hereford, Deaf Smith County, Texas.* HJN 050113 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2005 *Backhoe Trenching at 2 Proposed Lift Stations Located in Richmond, Fort Bend County, Texas.* Texas Antiquities Committee Permit No. 3712. HJN 050043 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2006 *An Intensive Cultural Resources Survey of the USACE Jurisdictional Areas Associated with the Proposed Realignment of Macho Creek, Duval County, Texas.* HJN 060199 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2006 *Cultural Resources Assessments of 4 Maintenance Locations along the Longhorn Partners Pipeline, L.P. in Schleicher County, Texas.* HJN 050175 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2006 *An Intensive Cultural Resources Survey of the Proposed Erie Street Detention Basin, Beaumont, Jefferson County, Texas.* Texas Antiquities Committee Permit No. 4031. HJN 060017 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2006 *An Intensive Cultural Resources Survey of the Proposed Corley-Cartwright Detention Basin, Beaumont, Jefferson County, Texas.* Texas Antiquities Committee Permit No. 4030. HJN 060016 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2006 *An Intensive Cultural Resources Survey of the Proposed Ridgewood Detention Basin, Beaumont, Jefferson County, Texas.* Texas Antiquities Committee Permit No. 4029. HJN 060014 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2007 *An Intensive Cultural Resources Survey of Lake Travis ISD's 12.75-acre West Cypress Hills Elementary School Tract, Travis County, Texas.* Texas Antiquities Committee Permit No. 4729. HJN 070187 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2007 *An Intensive Cultural Resources Survey and Subsequent NRHP Eligibility Testing of Areas within the Proposed 238-acre Blanco Riverwalk Development, Hays County, Texas.* HJN 060195 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2007 *An Intensive Cultural Resources Survey of a Proposed HDD beneath an Abandoned Tram Road Owned by the US Forest Service in Nacogdoches County, Texas.* HJN 070193 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2007 *An Intensive Cultural Resources Survey of the Proposed 883-acre Siena Subdivision Property, Round Rock, Williamson County, Texas.* HJN 070065 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2009 *Cultural Resources Investigations along the Proposed LyondellBasell CVOS ETBE Pipeline Right-of-Way in Harris County, Texas.* HJN 090059 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2009 *An Intensive Cultural Resources Survey of Phase 2 of the Proposed Wild Horse Ranch Northwest Wastewater Interceptor Right-of-Way, Travis County, Texas.* HJN 090061 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2009 *An Intensive Cultural Resources Survey of M2 Midstream, LLC's proposed Blackstone 8-Inch Lateral Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 090055 AR 13. Horizon Environmental Services, Inc. Austin, Texas.
- 2009 *An Intensive Cultural Resources Survey of Louisiana Midstream Gas Services' proposed CHK LA Minerals 32 H-1 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 107. Horizon Environmental Services, Inc. Austin, Texas.
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- 2010 *An Intensive Cultural Resources Survey of Louisiana Midstream Gas Services' proposed Porter-Beach 26-12-1 Natural Gas Gathering Line in DeSoto Parish, Louisiana.* HJN 080147 AR 125. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Cultural Resources Survey of Louisiana Midstream Gas Services' proposed Gilliam 23-13-14 H-1 Natural Gas Gathering Line in DeSoto Parish, Louisiana.* HJN 080147 AR 130. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Cultural Resources Survey of Petrohawk Energy Corporation's Proposed Bolton 26-H1 Well Pad and Access Road in Bossier Parish, Louisiana.* HJN 100011 AR. Horizon Environmental Services, Inc. Austin, Texas.

- 2010 *An Intensive Cultural Resources Survey of Petrohawk Energy Corporation's Proposed Ratzburg 18H No.1 Well Pad and Access Road in Caddo Parish, Louisiana.* HJN 100029 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Cultural Resources Survey of Louisiana Midstream Gas Services' proposed Nabors Properties 13 H-1 Natural Gas Gathering Line in DeSoto Parish, Louisiana.* HJN 080147 AR 124. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Cultural Resources Survey of Louisiana Midstream Gas Services' proposed Brush Bayou Natural Gas Gathering Line in Caddo Parish, Louisiana.* HJN 080147 AR 138. Horizon Environmental Services, Inc. Austin, Texas.
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- 2010 *An Intensive Phase I Cultural Resources Survey of the Proposed TGG 36-inch Phase 3 Section 1 Natural Gas Gathering Line in Caddo and DeSoto Parishes, Louisiana.* HJN 100050 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed CHK LA Minerals 24-13-12 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 140. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Mansfield Lateral 4A East Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 141. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Calhoun 9-13-12 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 149. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Petrohawk Energy Corporation's Proposed TBD 22-16N-10W Off-Unit Alt. No. 1 Well Pad and Access Road in Bienville Parish, Louisiana.* HJN 100057 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2010 *An Intensive Phase I Cultural Resources Survey of Petrohawk Energy Corporation's Proposed Weyerhauser 29H-1 and 32H-1 Well Pad Projects, DeSoto Parish, Louisiana.* HJN 100068 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Wiggins 31-12-12 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 152. Horizon Environmental Services, Inc. Austin, Texas.

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- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Keatchie 15-14-15 H-1 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 155. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed JMD 3-14-15 H-1 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 158. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *Archeological Monitoring Conducted During the Replacement of Waterline Segment 10, Anahuac, Chambers County, Texas.* HJN 100052 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Cultural Resources Survey of G-M WSC's Proposed Surface Water Treatment Facility and Intake Structure Project in Sabine County, Texas.* Texas Antiquities Committee Permit No. 5676. HJN 10074 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *Cultural Resources Investigations Conducted for the Proposed Rocky Creek Ranch WWTP Project in Travis County, Texas.* Texas Antiquities Committee Permit No. 5682. HJN 100081 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Mansfield Lateral 14 West Natural Gas Gathering Line, Sabine Parish, Louisiana.* HJN 080147 AR 148. Horizon Environmental Services, Inc. Austin, Texas.
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- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Rollert 23-12-13 H-1 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 170. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Petrohawk Energy Corporation's Proposed Tompkins 2-H No.1 Well Pad and Access Road in Bossier Parish, Louisiana.* HJN 100084 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Petrohawk Energy Corporation's Proposed TBD 19-16N-11W Off Unit Well Pad and Access Road in Bossier Parish, Louisiana.* HJN 100088 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Petrohawk Energy Corporation's Proposed Cowley 29H No. 1 Well Pad and Access Road in Bienville Parish, Louisiana.* HJN 100089 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Rocking G-31 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 173. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Mansfield Lateral 4BE Natural Gas Gathering Line, Red River Parish, Louisiana.* HJN 080147 AR 175. Horizon Environmental Services, Inc. Austin, Texas.

- 2010 *An Intensive Cultural Resources Survey of the USACE Jurisdictional Areas within the Proposed Crossings at Plum Creek Development in Hays County, Texas.* HJN 100067 AR. Horizon Environmental Services, Inc. Austin, Texas.
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- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed D'Artois 16 Well Connect Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 185. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Stalder 14-12N-13W Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 192. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Muse 24-14-15 H-1 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 199. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Nabors 7-12-11 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 204. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Aikens 17-12-11 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 206. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Mansfield Lateral 5E-7E Interconnect Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 207. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Quinn 19-11-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 180. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Patco 27-13-12 H-1 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 211. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Petro-Hunt 8-13-7 H-1 Natural Gas Gathering Line, Natchitoches and Red River Parishes, Louisiana.* HJN 080147 AR 215. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed LRE/DLP 13-13-12 H-1 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 216. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Mansfield Trunkline Phase 2 Extension Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 131. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Nabors 26-10-13 Natural Gas Gathering Line, Sabine Parish, Louisiana.* HJN 080147 AR 153. Horizon Environmental Services, Inc. Austin, Texas.

- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed CHK 36-10-13 Natural Gas Gathering Line, Sabine Parish, Louisiana.* HJN 080147 AR 225. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed NP LLC 17-12-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 231. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Petrohawk Energy Corporation's Proposed TBD 18-15N-10W Well Pad and Access Road in Bossier Parish, Louisiana.* HJN 100090 AR 23. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed CPS-Timberlands Natural Gas Gathering Line ROW in DeSoto Parish, Louisiana.* HJN 100090 AR 24. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed Culpepper North and Sustainable Natural Gas Gathering Line ROW in Bienville Parish, Louisiana.* HJN 100090 AR 25. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed Langford Natural Gas Gathering Line ROW in Bossier Parish, Louisiana.* HJN 100125 AR 08. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of a Segment of Kinderhawk Field Services, LLC's Proposed Loftin Lateral Natural Gas Gathering Line ROW in Red River and Bienville Parishes, Louisiana.* HJN 100125 AR 10. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Mansfield Lateral 13-14E Interconnect Natural Gas Gathering Line, Sabine Parish, Louisiana.* HJN 080147 AR 240. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Nabors 6-11-11 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 241. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Gallaspy 19-12-11 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 247. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Martinez 3 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 248. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Norris 1-13-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 248. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed Wilkinson-Almond Natural Gas Gathering Line ROW in Red River Parish, Louisiana.* HJN 100090 AR 28. Horizon Environmental Services, Inc. Austin, Texas.
- 2010 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed CHK LA Min 14-11-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 245. Horizon Environmental Services, Inc. Austin, Texas.

- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Bedsole 1-10-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 253. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Springridge Lateral 1 West Loop Comped Route Natural Gas Gathering Line, Caddo Parish, Louisiana.* HJN 080147 AR 260. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Morton 34-11-14 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 080147 AR 263. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed Robbins 8 Natural Gas Gathering Line ROW in DeSoto Parish, Louisiana.* HJN 100125 AR 15. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of the 18.95-Acre Aspen Heights Tract in San Marcos, Hays County, Texas.* HJN 110019 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed CPS Timberland 21 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 100125 AR 31. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed CHK Franks Pipeline Natural Gas Gathering Line, Bossier Parish, Louisiana.* HJN 100125 AR 26. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed CHK LA Min 15-11-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 110006 AR 20. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Goodrich Petroleum Corporation's Proposed Lowery No. 1 Well Pad Expansion Project, Nacogdoches County, Texas.* HJN 110040 AR 01. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of KinderHawk Field Services, LLC's Proposed Dewitt Gathering - East Extension Phase I ROW in DeWitt County, Texas.* HJN 100125 AR 34. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Mid-America Midstream Gas Services' Proposed Center Ranch A1H Natural Gas Gathering Line, Leon County, Texas.* HJN 110028 AR 02. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Rascoe 1-10-14 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 110006 AR 29. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Evans 10-12-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 110006 AR 31. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed Peavy Natural Gas Gathering Line, Bienville Parish, Louisiana.* HJN 100125 AR 56. Horizon Environmental Services, Inc. Austin, Texas.

- 2011 *An Intensive Phase I Cultural Resources Survey of 23 USACE Jurisdictional Crossings along an Eagle Ford Midstream, LLC Proposed 26.0-mile Natural Gas Gathering Line ROW and 2.2-mile Lateral ROW in LaSalle County, Texas.* HJN 080122 AR 10. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Kinderhawk Field Services, LLC's Proposed Wallace Lake Phase II Natural Gas Gathering Line ROW in Caddo Parish, Louisiana.* HJN 100125 AR 46. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of Extra Work Spaces Associated with 5 Pipe Replacement Segments along the Longhorn Pipeline Right-of-Way in Hays and Blanco Counties, Texas.* HJN 050175 AR 07. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed LA Minerals 36-12-12 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 110006 AR 33. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Petrohawk Energy Corporation' Proposed TBD 36-12N-14W Access Road ROW, DeSoto Parish, Louisiana.* HJN 100090 AR 42. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of 9 USACE Jurisdictional Crossings along Eagle Ford Midstream, LP's 20.8-mile 16" Natural Gas Pipeline ROW in LaSalle County, Texas.* HJN 080122 AR 17. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Lewis 7-10-13 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 110006 AR 34. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Magnolia Midstream Gas Services' Proposed Gray 14-14-15 Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 110026 AR 13. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of Petrohawk Energy Corporation's Proposed J-Hermann F 1H Access Road in DeWitt County, Texas.* HJN 100148 AR 32. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of Petrohawk Energy Corporation's Proposed Forest Wheeler B 1H and 2H Dual Well Access Road in McMullen County, Texas.* HJN 100148 AR 33. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of Aurora Resources Corporation's Proposed Quintanilla and Wheeler Eagle Ford Shale Well Pads in McMullen County, Texas.* HJN 110003 AR. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Phase I Cultural Resources Survey of Louisiana Midstream Gas Services' Proposed Ivory 14-10-13 2H Natural Gas Gathering Line, DeSoto Parish, Louisiana.* HJN 110006 AR 37. Horizon Environmental Services, Inc. Austin, Texas.
- 2011 *An Intensive Cultural Resources Survey of 3 Off-Site Wastewater Lines Associated with the Paso Robles Development in San Marcos, Hays County, Texas.* HJN 110078 AR. Horizon Environmental Services, Inc. Austin, Texas.
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